IN THE CLAIMS:

Please cancel claim 26, without prejudice, and amend claims 22 and 30 as follows:

1. (original) A method for sensing the temperature of glass during a manufacturing operation comprising:

subjecting glass having a first temperature to thermal changes by delivering a fluid having a second temperature to the glass, the second temperature different than the first temperature.

delivering an excitation beam through the fluid to excite photoluminescence in the glass,

detecting the excited photoluminescence from at least one location within the glass,

determining the temperature of the glass at the at least one location from the detected photoluminescence.

2. (original) The method of claim 1 wherein the fluid is a cooling fluid.

3. (original) The method of claim 2 further comprising adjusting the flow of the cooling fluid in response to the detected photoluminescence at at least one location in the glass.

4. (original) The method of claim 3 wherein the cooling fluid is delivered from a plurality of orifices and wherein the adjusting includes controlling fluid flow through the plurality of orifices.

5. (original) The method of claim 4 wherein the at least one location comprises approximately the center of the thickness of the glass.

6. (original) The method of claim 2 further comprising:

detecting the excited photoluminescence from a plurality of points at varying depths in the glass; and

determining the temperature of the glass at the plurality of locations from the detected photoluminescence.

7. (original) The method of claim 6 wherein the glass comprises iron or cerium and the excitation beam excites photoluminescence of the iron or cerium.

8. (original) The method of claim 7 wherein the excitation beam comprises light having a wavelength between about 300nm and about 450nm.

9. (original) The method of claim 8 wherein the detected photoluminescence has a wavelength between about 600nm and about 750nm or between about 400nm to about 450nm.

10. (original) The method of claim 1 wherein the photoluminescence is detected while the excitation beam is delivered.

11. (original) The method of claim 10 wherein the excitation beam is substantially continuous while the excited photoluminescence is detected.

12. (original) The method of claim 11 further comprising:

detecting excited photoluminescence and scattered excitation light at a plurality of locations at varying depths in the glass, and

determining the temperature at the plurality of locations from the detected scattered excitation light and the detected photoluminescence

13. (original) A method of determining a portion of the temperature distribution in a piece of glass comprising:

selecting an element in the glass,

exciting photoluminescence of the selected element at at least one location within the glass with a substantially continuous light source,

while exciting the photoluminescence, detecting the excited photoluminescence over a predetermined time period from the at least one location within the glass,

determining the temperature at the at least one location from the detected photoluminescence.

14. (original) The method of claim 13 wherein said glass includes a portion with a first surface and an opposing second surface defining a thickness therebetween and wherein the at least one location comprises approximately a midpoint between the first and second surfaces.

15. (original) The method of claim 14 wherein the at least one location comprises a plurality of locations at varying depths between the first and second surfaces.

16. (original) The method of claim 13 further comprising:

detecting scattered excitation light from the substantially continuous light source at the plurality of locations for a predetermined time period, and

determining the temperature at the plurality of locations from the detected scattered excitation light and the detected photoluminescence.

17. (original) The method of claim 16 further comprising

comparing the detected scattered excitation light and the detected photoluminescence to determine the temperature.

18. (original) The method of claim 17 wherein the substantially continuous light source produces light with a wavelength between about 300nm and about 450nm and the glass comprises $Fe_2O_3$ or cerium.

19. (original) The method of claim 13 further comprising determining the temperature at a predetermined location on the glass sheet without using the detected photoluminescence, and determining the temperature relative to the determined temperature at the predetermined location with the detected photoluminescence.

20. (original) The method of claim 13 further comprising:

cooling the sheet with a cooling fluid;

delivering an excitation beam to the glass sheet through the cooling fluid to excite photoluminescence in the glass.

21. (original) The method of claim 20 further comprising adjusting the flow of the cooling fluid in response to the determined temperature at the plurality of locations.

22. (currently amended) A system for processing glass comprising:

a furnace for heating glass products to a workable state,

a quenching assembly for cooling the glass and causing temperature gradients to be present within the glass,

at least one temperature sensing assembly, the sensing assembly comprising a light source and a detector, the light source adapted to deliver a beam of excitation light to the glass to excite photoluminescence from at least one location in the glass, the detector adapted to produce at least one signal in response to sensed photoluminescence emitted from the at least location in the glass,

a processor connected to the detector, the processor adapted to interpret the at least one signal to evaluate the temperature of the glass at the at least one location and produce at least one output control signal; and

a controller adapted to control the temperature of the glass, the controller operable in response to the output control signal;

<u>wherein the controller controls the quenching assembly to adjust the temperature of the glass</u>.

23. (original) The system of claim 22 wherein the at least one location comprises approximately the midpoint between top and bottom surfaces of the glass.

24. (original) The system of claim 23 wherein the at least one location comprises a plurality of locations at varying depths between the top and bottom surfaces.

25. (original) The system of claim 24 wherein the controller controls the furnace to adjust the temperature of the glass.

26. (canceled)

27. (original) The system of claim 24 wherein the processor is integral with the detector.

28. (original) The system of claim 22 wherein

the detector is adapted to detect the scattered excitation light from the at least one location and wherein the processor determines the temperature at the at least one location from a ratio between the detected scattered excitation light and the detected photoluminescence.

29. (original) The system of claim 28 wherein

the controller adjusts at least one of the furnace or quenching assembly in response to the determined temperature at the at least one location substantially deviating from a desired temperature.

30. (currently rewritten) A system for processing glass comprising:

a furnace for heating glass products to a workable state,

a quenching assembly for cooling the glass and causing temperature gradients to be present within the glass,

at least one temperature sensing assembly, the sensing assembly comprising a light source and a detector, the light source adapted to deliver a beam of excitation light to the glass to excite photoluminescence from at least one location in the glass, the detector adapted to produce at least one signal in response to sensed photoluminescence emitted from the at least location in the glass,

a processor connected to the detector, the processor adapted to interpret the at least one signal to evaluate the temperature of the glass at the at least one location and produce at least one output control signal; and

a controller adapted to control the temperature of the glass, the controller operable in response to the output control signal;

~~The system of claim 22~~ wherein the ~~at least one~~ detector is located at the quenching assembly and provides temperature profile information to the controller while glass is being quenched, the temperature profile information changing as the glass is quenched.

31. (original) The system of claim 30 wherein

the controller adjusts the quenching assembly in response to the changing temperature profile information.

32. (original) The system of claim 31 wherein the quenching assembly includes a plurality of nozzles each having an orifice and the controller adjusts at least one of the nozzles or orifices.

33. (original) The system of claim 22 further comprising movers for conveying the glass and wherein the movers are activated in response to the sensed temperature.

34. (original) A method of processing tempered glass comprising

heating glass to an elevated working temperature,

cooling the glass to a lower formed temperature at a quenching station,

sensing the temperature profile of the glass at the quenching station by exciting photoluminescence in the glass at a plurality of locations at varying depths in the glass, detecting the excited photoluminescence at the plurality of locations, determining the temperature at the plurality of locations from the detected photoluminescence,

evaluating the quality of the glass based on the sensed temperature profile.

35. (original) The method of claim 34 further comprising

adjusting an operating parameter based on the quality of the glass, the operating parameter comprising a heating rate or a cooling rate of the glass.

36. (original) The method of claim 34 wherein a set of predetermined temperature ranges are established for acceptable glass product and said evaluating compares sensed

temperatures to the set of predetermined temperature ranges, and further comprising rejecting glass products with sensed temperatures outside the predetermined temperature ranges.

37. (original) The method of claim 34 wherein

detecting the excited photoluminescence at the plurality of locations includes imaging the excited photoluminescence onto a segmented detector and correlating the response from one or more segments on the detector with one or more of the plurality of locations.

38. (original) The method of claim 37 further comprising detecting scattered excitation light from the plurality of locations and comparing the detected scattered excitation light with the detected photoluminescence.

39. (original) A temperature sensor for sensing the temperature of glass during processing, the sensor comprising:

a source of an excitation beam, the source comprising a source of excitation light and focusing optics to focus the beam through a piece of glass to form an excitation region within the glass,

a detector assembly, the detector assembly comprising imaging optics and at least first and second segmented detectors, the imaging optics adapted to image light from the excitation region within the glass onto the first and second detectors,

wherein the first detector detects the excited photoluminescence from the excitation region, one or more of the segments of the first detector receiving light from the imaging optics corresponding to one or more locations at varying depths in the glass.

40. (original) The sensor of claim 39 wherein

the second detector detects the scattered excitation light from the excitation region.

41. (original) The sensor of claim 40 further comprising a processor for determining the temperature of the glass in the excitation region from the detected excited photoluminescence.

42. (original) The sensor of claim 41 wherein the processor determines the temperature of the glass from the detected excited photoluminescence and the detected scattered excitation light.

43. (original) The sensor of claim 41 further comprising a controller for controlling a glass processing variable in response to the determined temperature of the glass.

44. (original) The sensor of claim 39 further comprising a beam splitter for selectively directing excitation light to the second detector and excited photoluminescence to the first detector.

45. (original) The sensor of claim 39 wherein the detector assembly is spaced from the excitation beam source such that the excitation beam and the focal axis of the imaging optics are substantially non parallel.

46. (original) The method of claim 13 wherein the selected element is a rare earth element.

47. (original) The method of claim 13 wherein the selected element is a lanthanide.